



PROJECT DESCRIPTION

CALIFORNIA HIGH-SPEED RAIL: PROGRAM ENVIRONMENTAL PHASE

CALIFORNIA HIGH-SPEED RAIL PROGRAM MANAGEMENT CONTRACT

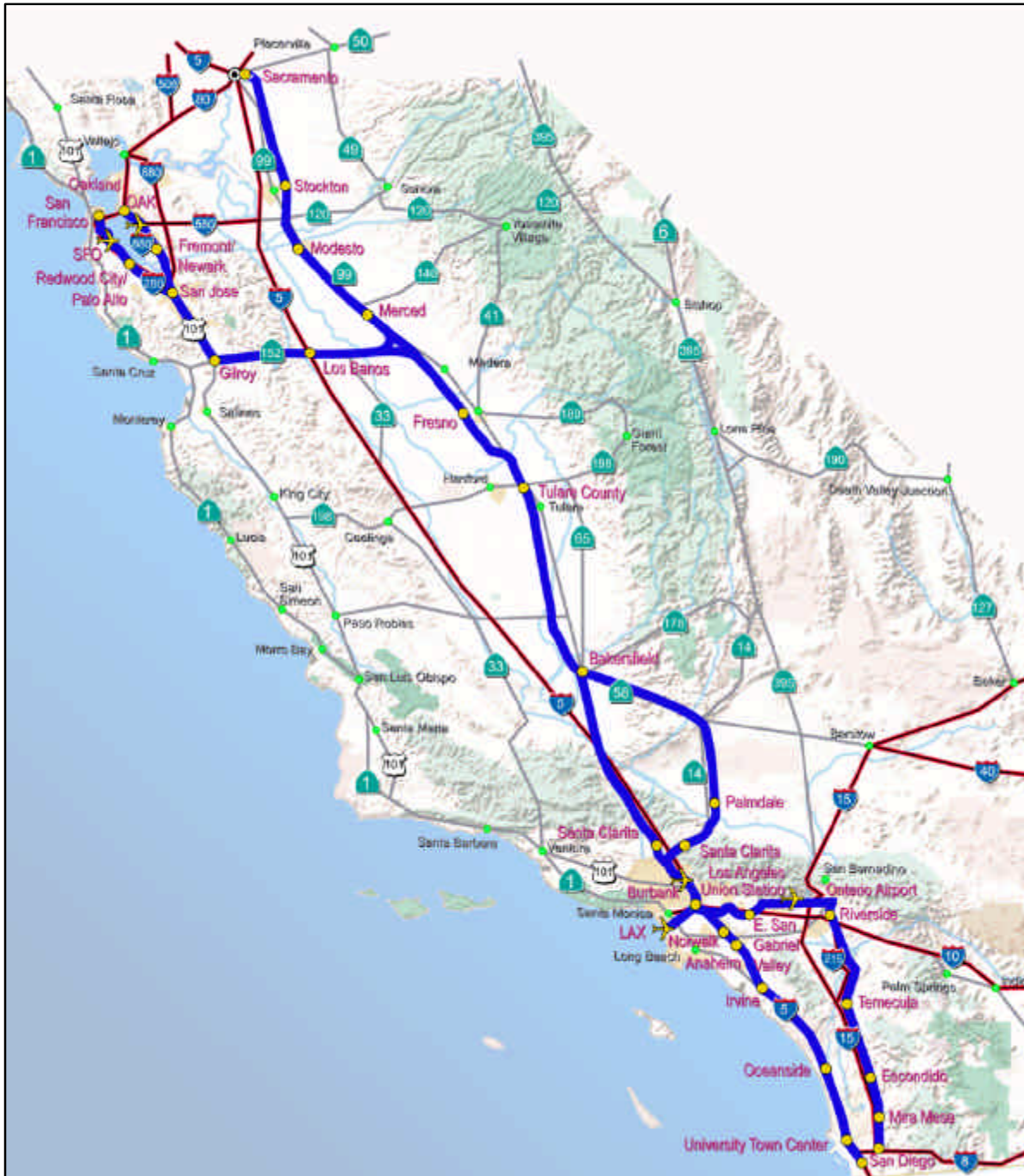
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The California High-Speed Rail Authority (HSRA) has defined alternative corridors for consideration in the preparation of a program level environmental document (HSRA Resolution 99-5, July 1999). The corridors and potential station locations to be evaluated are defined below by region.



San Diego to Los Angeles

Mainline service connecting Los Angeles and San Diego will follow either an inland route (along existing transportation corridors) and/or a coastal route (along the existing LOSSAN corridor). The inland route runs from Los Angeles Union Station to Riverside along existing rail corridors and new rights-of-way. Mainline service continues from Riverside to San Diego along the I-15/I-215 Corridor. The coastal route extends from Los Angeles Union Station to San Diego along the existing LOSSAN rail corridor. A link between Los Angeles Union Station and Los Angeles International Airport (LAX) will also be studied.

Los Angeles to Bakersfield

From Los Angeles Union Station to Santa Clarita, existing rail corridors are followed. There are two corridors crossing the Tehachapi Mountains, the first joins Bakersfield to Los Angeles via the I-5 Grapevine Corridor. The second corridor will connect Bakersfield and Los Angeles through the Antelope Valley (Palmdale).

Bakersfield to Sacramento

Between Bakersfield and Sacramento, specific options to be evaluated should include minimizing impacts to prime agricultural lands, utilizing existing rail corridors, and serving downtown stations or airports in Bakersfield and Fresno.

Merced to Bay Area

From the vicinity of Merced in the Central Valley the alignment follows the Pacheco Pass to Gilroy. From Gilroy to San Jose the alignment follows the existing Caltrain corridor. North of San Jose, mainline service will continue to follow the existing Caltrain corridor along the peninsula to San Francisco and/or existing rail corridors in the East Bay to Oakland.

STATIONS

Location

The following potential station locations (also shown on the map above) were defined in previous planning and engineering studies: San Diego, Mira Mesa, Escondido, Temecula, Riverside, ONT Airport, East San Gabriel Valley, University Town Center (La Jolla), Oceanside, Irvine, Anaheim, Norwalk, LAX Airport, Los Angeles Union Station, Burbank, Santa Clarita, Palmdale, Bakersfield, Tulare County/Visalia, Fresno, Merced, Modesto, Stockton, Sacramento, Los Banos, Gilroy, San Jose, Redwood City, SFO Airport, San Francisco, Fremont/Newark, OAK Airport, and Oakland. The potential sites listed represent general locations for planning purposes. Specific siting for stations will be refined through the program environmental process. Station placement will be determined based on system-wide needs and local constraints/conditions. Station placement must be coordinated with local and regional planning and must provide for seamless connectivity with other modes of travel.

Configuration

There are two principal types of stations: terminus and intermediate. Terminus stations are those where all trains are planned to stop upon arrival. San Diego, Los Angeles Union Station, LAX, San Francisco, Oakland, and Sacramento are all planned as terminus stations. All other potential stations are intermediate stations. Intermediate stations will provide off-line passenger platforms allowing for pass-through express services on the dual track mainline.

Passenger Amenities

The specific features and amenities will vary between stations, depending on passenger demand and station type (i.e., terminal or intermediate). Amenities should be focused on convenience and ease of transfer to and from other modes of transportation.

PERFORMANCE CRITERIA

The HSRA adopted the following performance criteria for a very high-speed rail system as part of the *High-Speed Rail Corridor Evaluation Technical Memorandum 2.0* in January 1999.

System Design Criteria

- Electric propulsion system.
- Fully grade-separated guideway.
- Fully access-controlled guideway with intrusion monitoring systems.
- Track geometry must maintain passenger comfort criteria (smoothness of ride, lateral acceleration $< 0.1g$).

System Capabilities

- All Weather / All Season Operation.
- Capable of sustained vertical gradient of 3.5% without significant degradation in performance.
- Capable of operating parcel and special freight service as a secondary use.
- Capable of safe, comfortable and efficient operation at speeds of over 200 mph.
- Capable of maintaining operations at three-minute headways.
- High-capacity and redundant communications systems capable of supporting fully automatic train control.

System Capacity

At a minimum, the system infrastructure must include dual track/guideway mainline with off-line station stopping tracks and other special trackwork as required for safe and efficient operation. The system must be capable of accommodating a wide range of passenger demand (up to 26,000 passengers per hour per direction). The system must accommodate normal maintenance activities without disruption to daily operations.

Level of Service

The HSRA adopted the following level-of-service criteria established for a very high-speed rail system as part of the ridership and revenue assumptions in September 1999.

Types of Service

- Express: trains running from Sacramento, San Jose or San Francisco to Los Angeles and San Diego without intermediate stops.
- Semi-Express: trains running between similar endpoints as express but with some intermediate stops (e.g., Bakersfield, Fresno).
- Suburban-Express: trains stopping at urban and suburban stations within the major metropolitan regions, but running as an express train between the regions.
- Local: trains serving every station.
- Long-Distance Commute: trains providing service from suburban and outlying stations within a region to the urban centers in that region (e.g., Temecula to Los Angeles).

Frequencies

To the extent possible trains should be scheduled according to clock-face departure times (e.g., express service from Los Angeles every hour on the hour). In general, train service characteristics will be based on actual market demand. System operating capabilities allow for flexibility in meeting market demands with up to three-minute headways.

PERFORMANCE GOALS

Mobility

- Provide a safe, interconnected statewide transportation system for California's citizens and visitors that ensures the mobility of people and goods, while enhancing economic prosperity and sustaining the quality of the environment.
- Enhance efficient operation of transportation facilities and service between the major urban areas of San Diego, Los Angeles, the Central Valley, San Jose, Oakland/San Francisco; and Sacramento.
- Provide a high-speed travel alternative that minimizes travel time between destination points (total trip time) to maximize ridership.
- Ability to carry the ridership forecasted by 2020 and to accommodate future growth through 2050.
- Maximize intermodal connections (airports, commuter rail, light rail).
- Maximize flexibility to meet changing market demands.

System Safety/Reliability

- 98% On-Time Arrivals (on-time: +/- one minute from schedule).
- Identify means for use of shared rights-of-way.
- Maximize safety in the design and operational characteristics of the system.
- Design for minimal damage and operational disruption from maximum probable seismic events.

Environment

- Minimize relocation/property acquisition.
- Minimize disruption to neighborhoods and division of communities.
- Minimize impacts to parkland.
- Compatible with State Transportation Improvement Program (STIP), Regional Transportation Improvement Program (RTIP), and Metropolitan Planning Organizations plans.
- Avoid/minimize impacts to historic properties and archaeological resources.
- Maximize reductions of mobile emissions by reducing vehicle miles traveled, particularly in and between urban areas with maintenance plans for ozone.
- Powered by fuels that result in "0" emissions.
- Minimize impacts to wetlands and habitat for threatened and endangered species.
- Avoid or minimize dividing public lands and natural conservation areas.
- Consider Environmental Justice Issues in selecting corridors.

Travel Times

Travel time goals are presented in Table 1 to guide the consideration of alignment evaluation and system performance/capabilities.

**TABLE 1
TRAVEL TIME GOALS (EXPRESS SERVICE)**

City Pair	Antelope Valley Corridor (hours: minutes)	I-5 Grapevine Corridor (hours: minutes)
Los Angeles to San Francisco / Oakland	2:42	2:30
Los Angeles to Sacramento	2:22	2:10
Los Angeles to San Jose	2:12	2:00
San Francisco / Oakland to San Jose	0:30	0:30
Los Angeles to San Diego	1:00	1:00
Fresno to Sacramento	0:55	0:55
Fresno to San Jose	0:45	0:45
Fresno to Los Angeles	1:32	1:20
Bakersfield to Los Angeles	0:62	0:50
Bakersfield to Sacramento	1:25	1:25
Bakersfield to San Jose	1:20	1:20
Santa Clarita ¹ to San Jose	1:57	1:45
Santa Clarita ¹ to Sacramento	2:02	1:50
Santa Clarita ¹ to Fresno	1:12	1:00
NOTE: ¹ The location of the Santa Clarita station varies by alternative.		